

CANADIAN GEOTECHNICAL JOURNAL/REVUE CANADIENNE DE
GEOTECHNIQUE
VOLUME 15, 1978
AUTHOR INDEX/REPERTOIRE DES AUTEURS

- Adams, J. I. Muskeg and the northern environment in Canada: Book Review, 134-135.
Andersen, K. H. See Fischer, K. P.
Baker, T. H. W. See Bozozuk, M.
Belshaw, D. J., and Palmer, J. H. L. Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay, 573-583.
Blanchet, R. See Tavenas, F.
Boissier, D., Gielly, J., Kastner, R., and Mangin, J. C. Détermination des moments et des pressions exercées sur un écran à partir de mesures inclinométriques, 522-536.
Bozozuk, M., and Baker, T. H. W. Measuring total volumetric strains during triaxial tests on frozen soils: a new approach: Discussion, 620-621.
Bozozuk, M., Fellenius, B. H., and Samson, L. Soil disturbance from pile driving in sensitive clay, 346-361.
Bozozuk, M., van Wijk, M. C., and Fellenius, B. H. Terrestrial photogrammetry for measuring pile movements, 596-599.
Burland, J. B. Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion, 619.
Burn, K. N. See Penner, E.
Byrne, P. M. An evaluation of the liquefaction potential of the Fraser Delta, 32-46.
Byrne, P. M., and Finn, W. D. L. Breakout of submerged structures buried to a shallow depth, 146-154.
Carrier, W. D., III. See Christian, J. T.
Carson, M. A. See Hendershot, W. H.
Chagnon, J.-Y. Construction d'ouvrages sur les sols argileux mous saturés: Book Review, 454.
Christian, J. T., and Carrier, W. D., III. Janbu, Bjerrum and Kjaernsli's chart reinterpreted, 123-128.
Christian, J. T., and Carrier, W. D., III. Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Reply, 619-620.
Coates, D. F. See Hungr, O.
Coatsworth, A. M., and Tabb, R. Usage, requirements and features of slope stability computer software (Canada, 1977): Discussion, 435-436.
Cole, D. M. A technique for measuring radial deformation during repeated load triaxial testing, 426-429.
Donovan, J. J. On the retrogression of landslides in sensitive muddy sediments: Discussion, 441-446.
Doud, J. O. Ice sheet loads on marine piles, 599-604.
Dusseault, M. B., and Morgenstern, N. R. Characteristics of natural slopes in the Athabasca Oil Sands, 202-215.
Dusseault, M. B., and Morgenstern, N. R. Shear strength of Athabasca Oil Sands, 216-238.
Eden, W. J. On the retrogression of landslides in sensitive muddy sediments: Discussion, 451-453.
Eide, O. See Lunne, T.
Eisenstein, Z., and Thomson, S. Geotechnical performance of a tunnel in till, 332-345.
El Komos, F. See Raymond, G. P.
Fedorkiw, J. P. See Quigley, R. M.
Fellenius, B. H. See Bozozuk, M.
Finn, W. D. L. See Byrne, P. M.
Fischer, K. P., Andersen, K. H., and Moum, J. Properties of an artificially cemented clay, 322-331.
Fredlund, D. G. Usage, requirements and features of slope stability computer software (Canada, 1977), 83-95.
Fredlund, D. G. Foundations on expansive soils: Book Review, 135-136.
Fredlund, D. G., Morgenstern, N. R., and Widger, R. A. The shear strength of unsaturated soils, 313-321.
Garbrecht, D. Application of the wave equation analysis to friction piles in sand: Discussion, 310-311.
Garneau, R. See Tavenas, F.
Gielly, J. See Boissier, D.
Goodwin, T. E. See Rivard, P. J.
Hanna, A. M. See Meyerhof, G. G.
Hathi, V. V. See Rein, R. G., Jr.
Hendershot, W. H., and Carson, M. A. Changes in the plasticity of a sample of Champlain clay after selective chemical dissolution to remove amorphous material, 609-616.
Hungr, O., and Coates, D. F. Deformability of joints and its relation to rock foundation settlements, 239-249.
Journeaux, N. L. See Rosenberg, P.

- Kastner, R. *See* Boissier, D.
- Khosla, V. K., and Singh, R. D. Influence of number of cycles on strain, 584-592.
- Ladd, C. C. *See* Leathers, F. D.
- La Rochelle, P. *See* Leroueil, S.
- La Rochelle, P. *See* Tavenas, F.
- LaSalle, P. *See* Legget, R. F.
- Lavallée, J. G. *See* Paré, J. J.
- Law, K. T. Undrained strength anisotropy in embankment stability analysis, 306-309.
- Law, K. T., and Lumb, P. A limit equilibrium analysis of progressive failure in the stability of slopes, 113-122.
- Law, K. T., and Lumb, P. A limit equilibrium analysis of progressive failure in the stability of slopes: Reply, 618.
- Leathers, F. D., and Ladd, C. C. Behavior of an embankment on New York varved clay, 250-268.
- Legget, R. F. Vegetation indicators for terrain evaluation in a prairie environment: Discussion, 435.
- Legget, R. F. Engineering geological maps: a guide to their preparation: Book Review, 455.
- Legget, R. F., and LaSalle, P. Soil studies at Shipshaw, Quebec: 1941 and 1969, 556-564.
- Leroueil, S. *See* Tavenas, F.
- Leroueil, S., Tavenas, F., Trak, B., La Rochelle, P., and Roy, M. Construction pore pressures in clay foundations under embankments. Part I: the Saint-Alban test fills, 54-65.
- Leroueil, S., Tavenas, F., Mieussens, C., and Peignaud, M. Construction pore pressures in clay foundations under embankments. Part II: generalized behaviour, 66-82.
- Lo, K. Y. Regional distribution of *in situ* horizontal stresses in rocks of southern Ontario, 371-381.
- Lo, K. Y., Wal, R. S. C., Palmer, J. H. L., and Quigley, R. M. Time-dependent deformation of shaly rocks in southern Ontario, 537-547.
- Lu, Y. *See* Rivard, P. J.
- Lumb, P. *See* Law, K. T.
- Lunne, T., and Eide, O. Correlation between cone resistance and vane shear strength in some Scandinavian soft to medium stiff clays: Reply, 438.
- Luthin, J. N. *See* Taylor, G. S.
- Lyndon, A., and Schofield, A. N. Centrifugal model tests of the Lodalen landslide, 1-13.
- Madhav, M. R., and Vitkar, P. P. Strip footing on weak clay stabilized with a granular trench or pile, 605-609.
- Mangin, J. C. *See* Boissier, D.
- May, R. W., and Thomson, S. The geology and geotechnical properties of till and related deposits in the Edmonton, Alberta, area, 362-370.
- Meyerhof, G. G. Bearing capacity of anisotropic cohesionless soils, 592-595.
- Meyerhof, G. G., and Hanna, A. M. Ultimate bearing capacity of foundations on layered soils under inclined load, 565-572.
- Meyerhof, G. G., and Sastry, V.V.R.N. Bearing capacity of piles in layered soils. Part 1. Clay overlying sand, 171-182.
- Meyerhof, G. G., and Sastry, V.V.R.N. Bearing capacity of piles in layered soils. Part 2. Sand overlying clay, 183-189.
- Michel, B. A mechanical model of creep of polycrystalline ice, 155-170.
- Mieussens, C. *See* Leroueil, S.
- Mitchell, R. J. On the retrogression of landslides in sensitive muddy sediments: Discussion, 446-450.
- Mitchell, R. J. *See* O'Connor, M. J.
- Morgenstern, N. R. *See* Dusseault, M. B.
- Morgenstern, N. R. *See* Fredlund, D. G.
- Moum, J. *See* Fischer, K. P.
- Nixon, J. F. First Canadian Geotechnical Colloquium: Foundation design approaches in permafrost areas, 96-112.
- O'Connor, M. J., and Mitchell, R. J. Measuring total volumetric strains during triaxial tests on frozen soils: a new approach, 47-53.
- Palmer, J. H. L. *See* Belshaw, D. J.
- Palmer, J. H. L. *See* Lo, K. Y.
- Parameswaran, V. R. Adfreeze strength of frozen sand to model piles, 494-500.
- Paré, J. J., Lavallée, J. G., and Rosenberg, P. Frost penetration studies in glacial till on the James Bay hydroelectric complex, 473-493.
- Peignaud, M. *See* Leroueil, S.
- Pells, P. J. N., and Turner, R. M. Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion, 436-437.
- Penner, E., and Burn, K. N. Review of engineering behaviour of marine clays in Eastern Canada, 269-282.
- Quigley, R. M. *See* Lo, K. Y.
- Quigley, R. M., Thompson, C. D., and Fedorkiw, J. P. A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario, 128-133.

- Raymond, G. P., and El Komos, F.** Repeated load testing of a model plane strain footing, 190-201.
Rein, R. G., Jr., and Hathi, V. V. The effect of stress on strain at the onset of tertiary creep of frozen soils, 424-426.
Rivard, P. J., and Goodwin, T. E. Geotechnical characteristics of compacted clays for earth embankments in the Prairie provinces, 391-401.
Rivard, P. J., and Lu, Y. Shear strength of soft fissured clays, 382-390.
Rosenberg, P. See Paré, J. J.
Rosenberg, P., and Journeaux, N. L. Load bearing slurry trench wall supported by glacial till, 430-434.
Roy, M. See Leroueil, S.
Roy, M. See Tavenas, F.
Samson, L. See Bozozuk, M.
Sastray, V.V.R.N. See Meyerhof, G. G.
Sauer, E. K. The engineering significance of glacier ice-thrusting, 457-472.
Schofield, A. N. Use of centrifugal model testing to assess slope stability, 14-31.
Schofield, A. N. See Lyndon, A.
Singh, R. D. See Khosla, V. K.
Tabb, R. See Coatsworth, A. M.
Tavenas, F. A. Application of the wave equation analysis to friction piles in sand: Reply, 312.
Tavenas, F. A. Centrifugal model tests of the Lodalen landslide: Discussion, 621-624.
Tavenas, F. See Leroueil, S.
Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R. The stability of stage-constructed embankments on soft clays, 283-305.
Tavenas, F., Leroueil, S., La Rochelle, P., and Roy, M. Creep behaviour of an undisturbed lightly overconsolidated clay, 402-423.
Taylor, G. S., and Luthin, J. N. A model for coupled heat and moisture transfer during soil freezing, 548-555.
Thompson, C. D. See Quigley, R. M.
Thomson, S. See Eisenstein, Z.
Thomson, S. See May, R. W.
Thomson, S., and Tweedie, R. W. The Edgerton Landslide, 510-521.
Trak, B. See Leroueil, S.
Turner, R. M. See Pells, P. J. N.
Tweedie, R. W. See Thomson, S.
Vallejo, L. E. A limit equilibrium analysis of progressive failure in the stability of slopes: Discussion, 617-618.
van Wijk, M. C. See Bozozuk, M.
Verbrugge, J.-C. Emploi d'une méthode psychrométrique dans des essais triaxiaux sur un limon remanié non saturé, 501-509.
Vitkar, P. P. See Madhav, M. R.
Wai, R. S. C. See Lo, K. Y.
Walz, B. An examination of some theories of earth pressure on shaft linings: Discussion, 438-440.
Widger, R. A. See Fredlund, D. G.
Wood, D. M. See Wroth, C. P.
Wroth, C. P., and Wood, D. M. The correlation of index properties with some basic engineering properties of soils, 137-145.

SUBJECT INDEX / REPERTOIRE DES SUJETS¹

A. General

04. Textbooks, Handbooks, and Geotechnical Periodicals

- Muskeg and the northern environment in Canada: Book Review. Adams, J. I., 134.
Foundations on expansive soils: Book Review. Fredlund, D. G., 135.
Construction d'ouvrages sur les sols argileux mous saturés: Critique de livre. Chagnon, J.-Y., 454.
Engineering geological maps: a guide to their preparation: Book Review. Legget, R. F., 455.

B. Engineering Geology

00. General

- A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario. Quigley, R. M., Thompson, C. D., and Fedorki, J. P., 128.
Properties of an artificially cemented clay. Fischer, K. P., Andersen, K. H., and Moum, J., 322.
Regional distribution of *in situ* horizontal stresses in rocks of southern Ontario. Lo, K. Y., 371.
Engineering geological maps: a guide to their preparation: Book Review. Legget, R. F., 455.
The engineering significance of glacier ice-thrusting. Sauer, E. K., 457.
Time-dependent deformation of shaly rocks in southern Ontario. Lo, K. Y., Wai, R. S. C., Palmer, J. H. L., and Quigley, R. M., 537.

01. Soil Formation

- Muskeg and the northern environment in Canada: Book Review. Adams, J. I., 134.
Foundations on expansive soils: Book Review. Fredlund, D. G., 135.
Characteristics of natural slopes in the Athabasca Oil Sands. Dusseault, M. B., and Morgenstern, N. R., 202.
Shear strength of Athabasca Oil Sands. Dusseault, M. B., and Morgenstern, N. R., 216.
Behavior of an embankment on New York varved clay. Leathers, F. D., and Ladd, C. C., 250.
Review of engineering behaviour of marine clays in Eastern Canada. Penner, E., and Burn, K. N., 269.
The stability of stage-constructed embankments on soft clays. Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R., 283.
Geotechnical performance of a tunnel in till. Eisenstein, Z., and Thomson, S., 332.
Soil disturbance from pile driving in sensitive clay. Bozozuk, M., Fellenius, B. H., and Samson, L., 346.
The geology and geotechnical properties of till and related deposits in the Edmonton, Alberta, area. May, R. W., and Thomson, S., 362.
Shear strength of soft fissured clays. Rivard, P. J., and Lu, Y., 382.
Creep behaviour of an undisturbed lightly overconsolidated clay. Tavenas, F., Leroueil, S., La Rochelle, P., and Roy, M., 402.
Vegetation indicators for terrain evaluation in a prairie environment: Discussion. Legget, R. F., 435.
On the retrogression of landslides in sensitive muddy sediments: Discussion. Donovan, J. J., 441.
On the retrogression of landslides in sensitive muddy sediments: Discussion. Mitchell, R. J., 446.
On the retrogression of landslides in sensitive muddy sediments: Discussion. Eden, W. J., 451.
Changes in the plasticity of a sample of Champlain clay after selective chemical dissolution to remove amorphous material. Hendershot, W. H., and Carson, M. A., 609.

03. Mass Movements and Subsidence

- Centrifugal model tests of the Lodalen landslide. Lyndon, A., and Schofield, A. N., 1.
Use of centrifugal model testing to assess slope stability. Schofield, A. N., 14.
An evaluation of the liquefaction potential of the Fraser Delta. Byrne, P. M., 32.

¹Based on the International Geotechnical Classification System (IGC) approved in 1969 by the International Society for Soil Mechanics and Foundation Engineering. Permission to use this classification system is gratefully acknowledged.

- A limit equilibrium analysis of progressive failure in the stability of slopes. Law, K. T., and Lumb, P., 113.
 The engineering significance of glacier ice-thrusting. Sauer, E. K., 457.
 The Edgerton Landslide. Thomson, S., and Tweedie, R. W., 510.
 Soil studies at Shipshaw, Quebec: 1941 and 1969. Legget, R. F., and LaSalle, P., 556.
 A limit equilibrium analysis of progressive failure in the stability of slopes: Discussion. Vallejo, L. E., 617.
 A limit equilibrium analysis of progressive failure in the stability of slopes: Reply. Law, K. T., and Lumb, P., 618.
 Centrifugal model tests of the Lodalen landslide: Discussion. Tavenas, F. A., 621.

05. Permafrost and Frozen Ground

- Measuring total volumetric strains during triaxial tests on frozen soils: a new approach. O'Connor, M. J., and Mitchell, R. J., 47.
 First Canadian Geotechnical Colloquium: Foundation design approaches in permafrost areas. Nixon, J. F., 96.
 The effect of stress on strain at the onset of tertiary creep of frozen soils. Rein, R. G., Jr., and Hathi, V. V., 424.
 Frost penetration studies in glacial till on the James Bay hydroelectric complex. Paré, J. J., Lavallée, J. G., and Rosenberg, P., 473.
 Adfreeze strength of frozen sand to model piles. Parameswaran, V. R., 494.
 A model for coupled heat and moisture transfer during soil freezing. Taylor, G. S., and Luthin, J. N., 548.
 Measuring total volumetric strains during triaxial tests on frozen soils: a new approach: Discussion. Bozozuk, M., and Baker, T. H. W., 620.

C. Site Investigations

00. General

- Characteristics of natural slopes in the Athabasca Oil Sands. Dusseault, M. B., and Morgenstern, N. R., 202.
 Vegetation indicators for terrain evaluation in a prairie environment: Discussion. Legget, R. F., 435.
 The engineering significance of glacier ice-thrusting. Sauer, E. K., 457.
 The Edgerton Landslide. Thomson, S., and Tweedie, R. W., 510.

03. Probing (Soundings)

- Correlation between cone resistance and vane shear strength in some Scandinavian soft to medium stiff clays: Reply. Lunne, T., and Eide, O., 438.

08. Field Testing (excl. tests for engineering properties)

- Application of the wave equation analysis to friction piles in sand: Discussion. Garbrecht, D., 310.
 Application of the wave equation analysis to friction piles in sand: Reply. Tavenas, F. A., 312.
 Load bearing slurry trench wall supported by glacial till. Rosenberg, P., and Journeaux, N. L., 430.
 Terrestrial photogrammetry for measuring pile movements. Bozozuk, M., van Wijk, M. C., and Fellenius, B. H., 596.
 Ice sheet loads on marine piles. Doud, J. O., 599.

D. Soil Properties: Laboratory and Field Determinations

00. General (incl. laboratory supplies)

- The correlation of index properties with some basic engineering properties of soils. Wroth, C. P., and Wood, D. M., 137.
 Bearing capacity of piles in layered soils. Part 1. Clay overlying sand. Meyerhof, G. G., and Sastry, V. V. R. N., 171.
 Bearing capacity of piles in layered soils. Part 2. Sand overlying clay. Meyerhof, G. G., and Sastry, V. V. R. N., 183.
 Review of engineering behaviour of marine clays in Eastern Canada. Penner, E., and Burn, K. N., 269.
 Soil disturbance from pile driving in sensitive clay. Bozozuk, M., Fellenius, B. H., and Samson, L., 346.
 The geology and geotechnical properties of till and related deposits in the Edmonton, Alberta, area. May, R. W., and Thomson, S., 362.
 Geotechnical characteristics of compacted clays for earth embankments in the Prairie provinces. Rivard, P. J., and Goodwin, T. E., 391.

- A technique for measuring radial deformation during repeated load triaxial testing. Cole, D. M., 426.
- Soil studies at Shipshaw, Quebec: 1941 and 1969. Legget, R. F., and LaSalle, P., 556.
- 01. Classification and Identification**
- The correlation of index properties with some basic engineering properties of soils. Wroth, C. P., and Wood, D. M., 137.
- 02. Physico-chemical Properties (incl. corrosion and thixotropy)**
- Properties of an artificially cemented clay. Fischer, K. P., Andersen, K. H., and Moum, J., 322.
- Changes in the plasticity of a sample of Champlain clay after selective chemical dissolution to remove amorphous material. Hendershot, W. H., and Carson, M. A., 609.
- 05. Compressibility (incl. consolidation and swelling)**
- Behavior of an embankment on New York varved clay. Leathers, F. D., and Ladd, C. C., 250.
- Creep behaviour of an undisturbed lightly overconsolidated clay. Tavenas, F., Leroueil, S., La Rochelle, P., and Roy, M., 402.
- 06. Shear-deformation and Strength Properties (incl. pore-water pressure)**
- Centrifugal model tests of the Lodalen landslide. Lyndon, A., and Schofield, A. N., 1.
- Use of centrifugal model testing to assess slope stability. Schofield, A. N., 14.
- An evaluation of the liquefaction potential of the Fraser Delta. Byrne, P. M., 32.
- Measuring total volumetric strains during triaxial tests on frozen soils: a new approach. O'Connor, M. J., and Mitchell, R. J., 47.
- Construction pore pressures in clay foundations under embankments. Part I: the Saint-Alban test fills. Leroueil, S., Tavenas, F., Trak, B., La Rochelle, P., and Roy, M., 54.
- Breakout of submerged structures buried to a shallow depth. Byrne, P. M., and Finn, W. D. L., 146.
- Shear strength of Athabasca Oil Sands. Dusseault, M. B., and Morgenstern, N. R., 216.
- The stability of stage-constructed embankments on soft clays. Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R., 283.
- The shear strength of unsaturated soils. Fredlund, D. G., Morgenstern, N. R., and Widger, R. A., 313.
- Properties of an artificially cemented clay. Fischer, K. P., Andersen, K. H., and Moum, J., 322.
- Shear strength of soft fissured clays. Rivard, P. J., and Lu, Y., 382.
- The effect of stress on strain at the onset of tertiary creep of frozen soils. Rein, R. G., Jr., and Hathi, V. V., 424.
- A technique for measuring radial deformation during repeated load triaxial testing. Cole, D. M., 426.
- Emploi d'une méthode psychrométrique dans des essais triaxiaux sur un limon remanié non saturé. Verbrugge, J.-C., 501.
- Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay. Belschaw, D. J., and Palmer, J. H. L., 573.
- Measuring total volumetric strains during triaxial tests on frozen soils: a new approach: Discussion. Bozozuk, M., and Baker, T. H.W., 620.
- Centrifugal model tests of the Lodalen landslide: Discussion. Tavenas, F. A., 621.
- 07. Dynamic Properties**
- An evaluation of the liquefaction potential of the Fraser Delta. Byrne, P. M., 32.
- Repeated load testing of a model plane strain footing. Raymond, G. P., and El Komos, F., 190.
- Influence of number of cycles on strain. Khosla, V. K., and Singh, R. D., 584.
- 08. Thermal Properties (incl. freezing)**
- Frost penetration studies in glacial till on the James Bay hydroelectric complex. Paré, J. J., Lavallée, J. G., and Rosenberg, P., 473.
- Adfreeze strength of frozen sand to model piles. Parameswaran, V. R., 494.
- 09. Compaction**
- Geotechnical characteristics of compacted clays for earth embankments in the Prairie provinces. Rivard, P. J., and Goodwin, T. E., 391.

E. Analysis of Soil-engineering Problems

- 01. In Situ Stresses caused by Gravity and Applied Loads and Excavations**
- Geotechnical performance of a tunnel in till. Eisenstein, Z., and Thomson, S., 332.
- 02. Deformation and Settlement Problems**
- Construction pore pressures in clay foundations under embankments. Part I: the Saint-Alban test fills. Leroueil, S., Tavenas, F., Trak, B., La Rochelle, P., and Roy, M., 54.

- Construction pore pressures in clay foundations under embankments. Part II: generalized behaviour. Leroueil, S., Tavenas, F., Mieussens, C., and Peignaud, M., 66.
 Janbu, Bjerrum and Kjaernsli's chart reinterpreted. Christian, J. T., and Carrier, W. D., III, 123.
 Behavior of an embankment on New York varved clay. Leathers, F. D., and Ladd, C. C., 250.
 The stability of stage-constructed embankments on soft clays. Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R., 283.
 Geotechnical performance of a tunnel in till. Eisenstein, Z., and Thomson, S., 332.
 Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion. Pells, P. J. N., and Turner, R. M., 436.
 Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay. Belshaw, D. J., and Palmer, J. H. L., 573.
 Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion. Burland, J. B., 619.
 Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Reply. Christian, J. T., and Carrier, W. D., III, 619.

03. Bearing Capacity of Soils

- First Canadian Geotechnical Colloquium: Foundation design approaches in permafrost areas. Nixon, J. F., 96.
 Breakout of submerged structures buried to a shallow depth. Byrne, P. M., and Finn, W. D. L., 146.
 Repeated load testing of a model plane strain footing. Raymond, G. P., and El Komos, F., 190.
 Ultimate bearing capacity of foundations on layered soils under inclined load. Meyerhof, G. G., and Hanna, A. M., 565.
 Bearing capacity of anisotropic cohesionless soils. Meyerhof, G. G., 592.
 Strip footing on weak clay stabilized with a granular trench or pile. Madhav, M. R., and Vitkar, P. P., 605.

04. Bearing Capacity of Piles

- Bearing capacity of piles in layered soils. Part 1. Clay overlying sand. Meyerhof, G. G., and Sastry, V. V. R. N., 171.
 Bearing capacity of piles in layered soils. Part 2. Sand overlying clay. Meyerhof, G. G., and Sastry, V. V. R. N., 183.
 Application of the wave equation analysis to friction piles in sand: Discussion. Garbrecht, D., 310.
 Application of the wave equation analysis to friction piles in sand: Reply. Tavenas, F. A., 312.
 Soil disturbance from pile driving in sensitive clay. Bozozuk, M., Fellenius, B. H., and Samson, L., 346.
 Terrestrial photogrammetry for measuring pile movements. Bozozuk, M., van Wijk, M. C., and Fellenius, B. H., 596.
 Ice sheet loads on marine piles. Doud, J. O., 599.

05. Earth Pressure Problems (incl. silos)

- An examination of some theories of earth pressure on shaft linings: Discussion. Walz, B., 438.
 Détermination des moments et des pressions exercées sur un écran à partir de mesures inclinométriques. Boissier, D., Gielly, J., Kastner, R., et Mangin, J. C., 522.
 Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay. Belshaw, D. J., and Palmer, J. H. L., 573.

06. Stability of Slopes, Cuts, and Excavations

- Centrifugal model tests of the Lodalen landslide. Lyndon, A., and Schofield, A. N., 1.
 Construction pore pressures in clay foundations under embankments. Part II: generalized behaviour. Leroueil, S., Tavenas, F., Mieussens, C., and Peignaud, M., 66.
 Usage, requirements and features of slope stability computer software (Canada, 1977). Fredlund, D. G., 83.
 A limit equilibrium analysis of progressive failure in the stability of slopes. Law, K. T., and Lumb, P., 113.
 Characteristics of natural slopes in the Athabasca Oil Sands. Dusseault, M. B., and Morgenstern, N. R., 202.
 The stability of stage-constructed embankments on soft clays. Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R., 283.
 Undrained strength anisotropy in embankment stability analysis. Law, K. T., 306.
 Shear strength of soft fissured clays. Rivard, P. J., and Lu, Y., 382.
 Usage, requirements and features of slope stability computer software (Canada, 1977): Discussion. Coatsworth, A. M., and Tabb, R., 435.
 On the retrogression of landslides in sensitive muddy sediments: Discussion. Donovan, J. J., 441.
 On the retrogression of landslides in sensitive muddy sediments: Discussion. Mitchell, R. J., 446.
 On the retrogression of landslides in sensitive muddy sediments: Discussion. Eden, W. J., 451.

- The Edgerton Landslide. Thomson, S., and Tweedie, R. W., 510.
 A limit equilibrium analysis of progressive failure in the stability of slopes: Discussion. Vallejo, L. E., 617.
 A limit equilibrium analysis of progressive failure in the stability of slopes: Reply. Law, K. T., and Lumb, P., 618.
- 08. Dynamic Problems**
 An evaluation of the liquefaction potential of the Fraser Delta. Byrne, P. M., 32.
 Repeated load testing of a model plane strain footing. Raymond, G. P., and El Komos, F., 190.
 Influence of number of cycles on strain. Khosla, V. K., and Singh, R. D., 584.
- 09. Frost Action and Heat-transfer Problems**
 First Canadian Geotechnical Colloquium: Foundation design approaches in permafrost areas. Nixon, J. F., 96.
 Frost penetration studies in glacial till on the James Bay hydroelectric complex. Paré, J. J., Lavallée, J. G., and Rosenberg, P., 473.
 A model for coupled heat and moisture transfer during soil freezing. Taylor, G. S., and Luthin, J. N., 548.

F. Rock Properties: Laboratory and Field Determinations

- 05. Compressibility and Swelling**
 A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario. Quigley, R. M., Thompson, C. D., and Fedorkiw, J. P., 128.
 Deformability of joints and its relation to rock foundation settlements. Hungr, O., and Coates, D. F., 239.
- 06. Shear-deformation and Strength Properties**
 A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario. Quigley, R. M., Thompson, C. D., and Fedorkiw, J. P., 128.
 Regional distribution of *in situ* horizontal stresses in rocks of southern Ontario. Lo, K. Y., 371.
 Time-dependent deformation of shaly rocks in southern Ontario. Lo, K. Y., Wai, R. S. C., Palmer, J. H. L., and Quigley, R. M., 537.

G. Analysis of Rock-engineering Problems

- 01. In Situ Stresses caused by Gravity, Tectonics, Applied Loads, and Excavations**
 Regional distribution of *in situ* horizontal stresses in rocks of southern Ontario. Lo, K. Y., 371.
- 02. Deformation Problems**
 Deformability of joints and its relation to rock foundation settlements. Hungr, O., and Coates, D. F., 239.
 Time-dependent deformation of shaly rocks in southern Ontario. Lo, K. Y., Wai, R. S. C., Palmer, J. H. L., and Quigley, R. M., 537.

H. Design, Construction, and Behaviour of Engineering Works

- 00. General**
 Review of engineering behaviour of marine clays in Eastern Canada. Penner, E., and Burn, K. N., 269.
- 01. Foundations of Structures**
 First Canadian Geotechnical Colloquium: Foundation design approaches in permafrost areas. Nixon, J. F., 96.
 Foundations on expansive soils: Book Review. Fredlund, D. G., 135.
 Breakout of submerged structures buried to a shallow depth. Byrne, P. M., and Finn, W. D. L., 146.
 Bearing capacity of piles in layered soils. Part 1. Clay overlying sand. Meyerhof, G. G., and Sastry, V. V. R. N., 1971.
 Bearing capacity of piles in layered soils. Part 2. Sand overlying clay. Meyerhof, G. G., and Sastry, V. V. R. N., 183.
 Repeated load testing of a model plane strain footing. Raymond, G. P., and El Komos, F., 190.
 Application of the wave equation analysis to friction piles in sand: Discussion. Garbrecht, D., 310.
 Application of the wave equation analysis to friction piles in sand: Reply. Tavenas, F. A., 312.

Soil disturbance from pile driving in sensitive clay. Bozozuk, M., Fellenius, B. H., and Samson, L., 346.

Load bearing slurry trench wall supported by glacial till. Rosenberg, P., and Journeaux, N. L., 430.

Strip footing on weak clay stabilized with a granular trench or pile. Madhav, M. R., and Vitkar, P. P., 605.

02. *Retaining Structures and Cutoff Walls*

Détermination des moments et des pressions exercées sur un écran à partir de mesures inclinométriques. Boissier, D., Gielly, J., Kastner, R., et Mangin, J. C., 522.

03. *Unsupported Excavations*

A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario. Quigley, R. M., Thompson, C. D., and Fedorkiw, J. P., 128.

04. *Earthworks, Embankments, Fills, and Dams*

Construction pore pressures in clay foundations under embankments. Part I: The Saint-Alban test fills. Leroueil, S., Tavenas, F., Trak, B., La Rochelle, P., and Roy, M., 54.

Construction pore pressures in clay foundations under embankments. Part II: generalized behaviour. Leroueil, S., Tavenas, F., Mieussens, C., and Peignaud, M., 66.

Behavior of an embankment on New York varved clay. Leathers, F. D., and Ladd, C. C., 250.

The stability of stage-constructed embankments on soft clays. Tavenas, F., Leroueil, S., Blanchet, R., and Garneau, R., 283.

Shear strength of soft fissured clays. Rivard, P. J., and Lu, Y., 382.

05. *Underground Structures (incl. tunnels, conduits, and dams)*

Geotechnical performance of a tunnel in till. Eisenstein, Z., and Thomson, S., 332.

Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay. Belshaw, D. J., and Palmer, J. H. L., 573.

K. Construction Methods and Equipment

00. *General*

Construction d'ouvrages sur les sols argileux mous saturés: Critique de livre. Chagnon, J.-Y., 454.

05. *Compaction*

Geotechnical characteristics of compacted clays for earth embankments in the Prairie provinces. Rivard, P. J., and Goodwin, T. E., 391.

07. *Piles and Pile Driving*

Terrestrial photogrammetry for measuring pile movements. Bozozuk, M., van Wijk, M. C., and Fellenius, B. H., 596.

10. *Slurry-assisted Construction of Foundation and Cut-off Walls*

Load bearing slurry trench wall supported by glacial till. Rosenberg, P., and Journeaux, N. L., 430.

S. Snow and Ice Mechanics and Engineering

01. *Snow and Ice Cover*

Ice sheet loads on marine piles. Doud, J. O., 599.

02. *Properties of Snow and Ice*

A mechanical model of creep of polycrystalline ice. Michel, B., 155.

and the public sector, and the role of the private sector in the delivery of health care services. In addition, it provides a framework for analyzing the impact of the health care system on the economy.

The paper is organized as follows. Section I provides a brief overview of the literature on the relationship between health care and the economy.

Section II presents a conceptual framework for analyzing the relationship between health care and the economy. This framework is based on the idea that health care is a production process, and that the production of health care services is influenced by a variety of factors, including the availability of resources, the level of technology, and the demand for health care services. The framework also recognizes that health care is a service, and that the delivery of health care services is influenced by a variety of factors, including the availability of resources, the level of technology, and the demand for health care services.

Section III provides a brief overview of the literature on the relationship between health care and the economy.

Section IV presents a conceptual framework for analyzing the relationship between health care and the economy.

Section V provides a brief overview of the literature on the relationship between health care and the economy.

Section VI presents a conceptual framework for analyzing the relationship between health care and the economy.

Section VII provides a brief overview of the literature on the relationship between health care and the economy.

Section VIII presents a conceptual framework for analyzing the relationship between health care and the economy.

Section IX provides a brief overview of the literature on the relationship between health care and the economy.

Section X presents a conceptual framework for analyzing the relationship between health care and the economy.

Section XI provides a brief overview of the literature on the relationship between health care and the economy.

Section XII presents a conceptual framework for analyzing the relationship between health care and the economy.

Section XIII provides a brief overview of the literature on the relationship between health care and the economy.

Canadian Geotechnical Journal

Revue canadienne de géotechnique

Volume 15 • 1978

Editor D. J. BAZETT Directeur scientifique

Associate Editors/Directeurs scientifiques associés

J.-Y. CHAGNON
J. I. CLARK
L. W. GOLD

J. J. HAMILTON
N. R. McCAMMON
R. M. QUIGLEY

L. SAMSON
J. L. SEYCHUK
F. TAVENAS

PUBLISHING DEPARTMENT SERVICE DE PUBLICATION
at the National Research Council of Canada du Conseil national de recherches du Canada

Editor-in-chief C. T. BISHOP Directeur général

Assistant Editor-in-chief P. A. REDHEAD Directeur général adjoint

Manager H. WILLIAMSON Directeur administratif

Publishing Supervisor S. E. JENNESS Préposé de la publication

Senior Publication Officer F. M. KAVCIC Agent supérieur à la publication

Publication Officer S. A. DiLABIO Agent à la publication

Published by the
National Research Council
of Canada

Publiée par le
Conseil national de recherches
du Canada

CONTENTS / SOMMAIRE

FEBRUARY/FEVRIER

ARTICLES:

A. Lyndon and A. N. Schofield Centrifugal model tests of the Lodalen landslide	1
A. N. Schofield Use of centrifugal model testing to assess slope stability	14
Peter M. Byrne An evaluation of the liquefaction potential of the Fraser Delta	32
M. J. O'Connor and R. J. Mitchell Measuring total volumetric strains during triaxial tests on frozen soils: a new approach	47
S. Leroueil, F. Tavenas, B. Trak, P. La Rochele and M. Roy Construction pore pressures in clay foundations under embankments. Part I: the Saint-Alban test fills	54
S. Leroueil, F. Tavenas, C. Mieussens and M. Peignaud Construction pore pressures in clay foundations under embankments. Part II: generalized behaviour	66
D. G. Fredlund Usage, requirements and features of slope stability computer software (Canada, 1977)	83
J. F. Nixon First Canadian Geotechnical Colloquium: Foundations design approaches in permafrost areas	96
K. Tim Law and Peter Lumb A limit equilibrium analysis of progressive failure in the stability of slopes	113

TECHNICAL NOTES/NOTES TECHNIQUES:

John T. Christian and W. David Carrier III Janbu, Bjerrum and Kjaernsli's chart reinterpreted	123
R. M. Quigley, C. D. Thompson and J. P. Fedorkiw A pictorial case history of lateral rock creep in an open cut into the Niagara Escarpment rocks at Hamilton, Ontario	128

BOOK REVIEWS/CRITIQUES DE LIVRES:

J. I. Adams Muskeg and the northern environment in Canada	134
D. G. Fredlund Foundations in expansive soils	135

MAY/MAI

ARTICLES:

C. P. Wroth and D. M. Wood The correlation of index properties with some basic engineering properties of soils	137
Peter M. Byrne and W. D. Liam Finn Breakout of submerged structures buried to a shallow depth	146
Bernard Michel A mechanical model of creep of polycrystalline ice	155
G. G. Meyerhof and V. V. R. N. Sastry Bearing capacity of piles in layered soils. Part 1. Clay overlying sand	171
G. G. Meyerhof and V. V. R. N. Sastry Bearing capacity of piles in layered soils. Part 2. Sand overlying clay	183
Gerald P. Raymond and Fadel El Komos Repeated load testing of a model plane strain footing	190
Maurice B. Dusseault and Norbert R. Morgenstern Characteristics of natural slopes in the Athabasca Oil Sands	202
Maurice B. Dusseault and Norbert R. Morgenstern Shear strength of Athabasca Oil Sands	216
O. Hungi and D. F. Coates Deformability of joints and its relation to rock foundation settlements	239
Francis D. Leathers and Charles C. Ladd Behavior of an embankment on New York varved clay	250
E. Penner and K. N. Burn Review of engineering behaviour of marine clays in Eastern Canada	269
F. Tavenas, R. Garneau, R. Blanchet, and S. Leroueil The stability of stage-constructed embankments on soft clays	283

TECHNICAL NOTE/NOTE TECHNIQUE:

K. Tim Law Undrained strength anisotropy in embankment stability analysis	306
---------------------------------------------------------------------------	-----

DISCUSSIONS:

D. Garbrecht Application of the wave equation analysis to friction piles in sand: Discussion	310
F. A. Tavenas Application of the wave equation analysis to friction piles in sand: Reply	312

AUGUST/AOUT

ARTICLES:

D. G. Fredlund, N. R. Morgenstern, and R. A. Widger	The shear strength of unsaturated soils	313
K. P. Fischer, K. H. Andersen, and J. Moum	Properties of an artificially cemented clay	322
Z. Eisenstein and S. Thomson	Geotechnical performance of a tunnel in till	332
M. Bozozuk, B. H. Fellenius, and L. Samson	Soil disturbance from pile driving in sensitive clay	346
R. W. May and S. Thomson	The geology and geotechnical properties of till and related deposits in the Edmonton, Alberta, area	362
K. Y. Lo	Regional distribution of <i>in situ</i> horizontal stresses in rocks of Southern Ontario	371
P. J. Rivard and Y. Lu	Shear strength of soft fissured clays	382
P. J. Rivard and T. E. Goodwin	Geotechnical characteristics of compacted clays for earth embankments in the Prairie provinces	391
F. Tavenas, S. Leroueil, P. La Rochelle, and M. Roy	Creep behaviour of an undisturbed lightly overconsolidated clay	402

TECHNICAL NOTES/NOTES TECHNIQUES:

R. G. Rein, Jr. and V. V. Hathi	The effect of stress on strain at the onset of tertiary creep of frozen soils	424
David M. Cole	A technique for measuring radial deformation during repeated load triaxial testing	426
Peter Rosenberg and Noel L. Journeaux	Load bearing slurry trench wall supported by glacial till	430

DISCUSSIONS:

R. F. Legget	Vegetation indicators for terrain evaluation in a prairie environment: Discussion	435
A. M. Coatsworth and R. Tabb	Usage, requirements and features of slope stability computer software (Canada, 1977): Discussion	435
P. J. N. Pells and R. M. Turner	Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion	436
T. Lunne and O. Eide	Correlation between cone resistance and vane shear strength in some Scandinavian soft to medium stiff clays: Reply	438
B. Walz	An examination of some theories of earth pressure on shaft linings: Discussion	438
J. J. Donovan	On the retrogression of landslides in sensitive muddy sediments: Discussion	441
R. J. Mitchell	On the retrogression of landslides in sensitive muddy sediments: Discussion	446
W. J. Eden	On the retrogression of landslides in sensitive muddy sediments: Discussion	451

BOOK REVIEWS/CRITIQUES DE LIVRES:

Jean-Yves Chagnon	Construction d'ouvrages sur les sols argileux mous saturés	454
R. F. Legget	Engineering geological maps: a guide to their preparation	455

NOVEMBER/NOVEMBRE

ARTICLES:

E. Karl Sauer	The engineering significance of glacier ice-thrusting	457
J. J. Paré, J. G. Lavallée, and P. Rosenberg	Frost penetration studies in glacial till on the James Bay hydroelectric complex	473
V. R. Parameswaran	Adfreeze strength of frozen sand to model piles	494
Jean-Claude Verbrugge	Emploi d'une méthode psychrométrique dans des essais triaxiaux sur un limon remanié non saturé	501
S. Thomson and R. W. Tweedie	The Edgerton Landslide	510
D. Boissier, J. Gielly, R. Kastner et J. C. Mangin	Détermination des moments et des pressions exercées sur un écran à partir de mesures inclinométriques	522
K. Y. Lo, R. S. C. Wai, J. H. L. Palmer, and R. M. Quigley	Time-dependent deformation of shaly rocks in southern Ontario	537
George S. Taylor and James N. Luthin	A model for coupled heat and moisture transfer during soil freezing	548
Robert F. Legget and Pierre LaSalle	Soil studies at Shipshaw, Quebec: 1941 and 1969	556
G. G. Meyerhof and A. M. Hanna	Ultimate bearing capacity of foundations on layered soils under inclined load	565
D. J. Belshaw and J. H. L. Palmer	Results of a program of instrumentation involving a precast segmented concrete-lined tunnel in clay	573

TECHNICAL NOTES/NOTES TECHNIQUES:

Vijay K. Khosla and Ram D. Singh	Influence of number of cycles on strain	584
G. G. Meyerhof	Bearing capacity of anisotropic cohesionless soils	592
M. Bozozuk, M. C. van Wijk, and B. H. Fellenius	Terrestrial photogrammetry for measuring pile movements	596
Jerry O. Doud	Ice sheet loads on marine piles	599
M. R. Madhav and P. P. Vitkar	Strip footing on weak clay stabilized with a granular trench or pile	605
W. H. Hendershot and M. A. Carson	Changes in the plasticity of a sample of Champlain clay after selective chemical dissolution to remove amorphous material	609

DISCUSSIONS:

Luis E. Vallejo	A limit equilibrium analysis of progressive failure in the stability of slopes: Discussion	617
K. T. Law and P. Lumb	A limit equilibrium analysis of progressive failure in the stability of slopes: Reply	618
J. B. Burland	Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Discussion	619
John T. Christian and W. David Carrier III	Janbu, Bjerrum and Kjaernsli's chart reinterpreted: Reply	619
M. Bozozuk and T. H. W. Baker	Measuring total volumetric strains during triaxial tests on frozen soils: a new approach: Discussion	620
F. A. Tavenas	Centrifugal model tests of the Lodalen landslide: Discussion	621

Author Index/Répertoire des auteurs	625
Subject Index/Répertoire des sujets	628
Contents/Sommaire	v
